

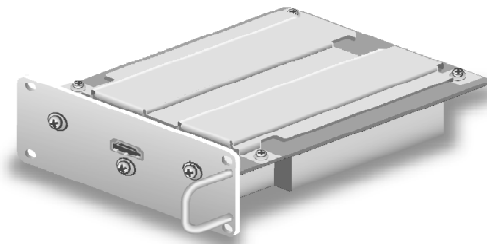
ORDER NO. ITD0507046CE

D10

Service Manual

HDMI Terminal Board

TY-FB8HM



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⚠ WARNING

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1. Safety Precautions

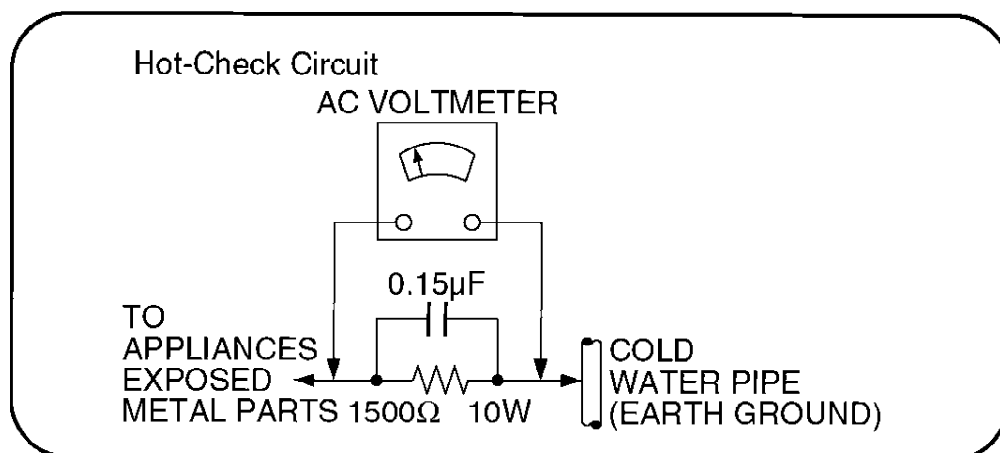
1.1. General Guidelines

- 1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.**
- 2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.**
- 3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.**

1.1.1. Leakage Current Cold Check

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between $1\text{M } \Omega$ and $5.2\text{M } \Omega$.
When the exposed metal does not have a return path to the chassis, the reading must be ∞ .

Figure 1



1.1.2. Leakage Current Hot Check (See [Figure 1.](#))

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a $1.5\text{k } \Omega$, 10 watts resistor, in parallel with a $0.15 \mu \text{F}$ capacitors, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in [Figure 1.](#)
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be

used to make the hot checks, leakage current must not exceed 1/2 milliamp. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

2. Prevention of Electro Static Discharge (ESD) to Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electro static discharge (ESD).

- 1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.**
- 2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.**
- 3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.**
- 4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static (ESD protected)" can generate electrical charge sufficient to damage ES devices.**
- 5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.**
- 6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).**
- 7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to**

the chassis or circuit assembly into which the device will be installed.

Caution

Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by Δ in the schematic diagrams, Exploded Views and replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

3. About lead free solder (PbF)

Note: Lead is listed as (Pb) in the periodic table of elements.

In the information below, Pb will refer to Lead solder, and PbF will refer to Lead Free Solder.

The Lead Free Solder used in our manufacturing process and discussed below is (Sn+Ag+Cu). That is Tin (Sn), Silver (Ag) and Copper (Cu) although other types are available.

This model uses Pb Free solder in it's manufacture due to environmental conservation issues. For service and repair work, we'd suggest the use of Pb free solder as well, although Pb solder may be used.

PCBs manufactured using lead free solder will have the PbF within a leaf Symbol

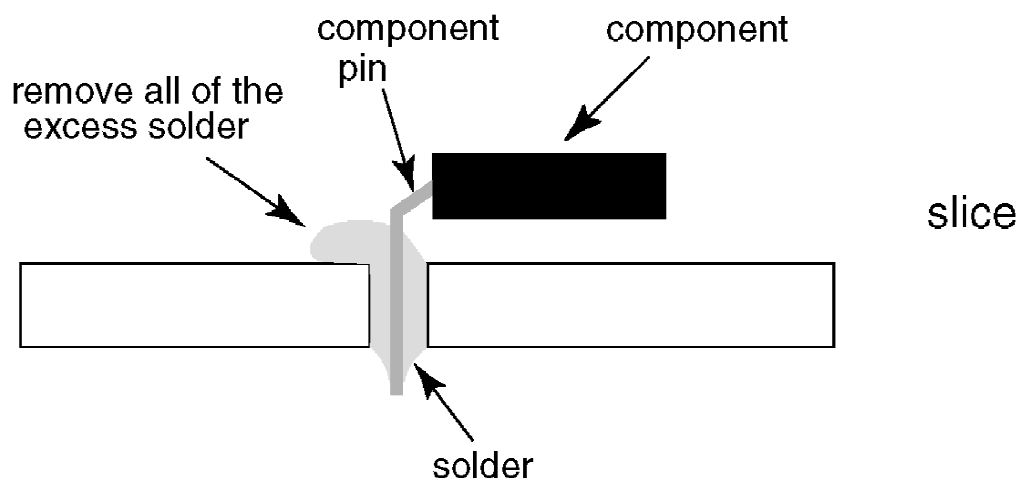


stamped on the back of PCB.

Caution

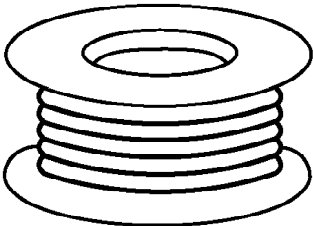
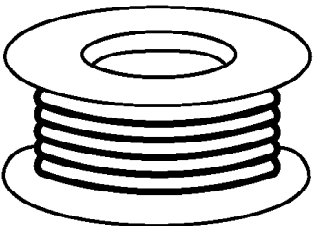
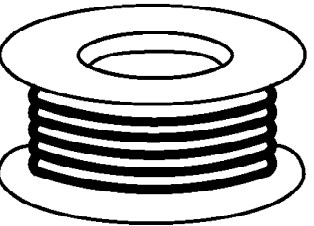
- Pb free solder has a higher melting point than standard solder. Typically the melting point is 50 ~ 70 °F (30~40°C) higher. Please use a high temperature soldering iron and set it to 700 ± 20 °F (370 ± 10 °C).
- Pb free solder will tend to splash when heated too high (about 1100 °F or 600 °C).
If you must use Pb solder, please completely remove all of the Pb free solder on the pins or solder area before applying Pb solder. If this is not practical, be sure to heat the Pb free solder until it melts, before applying Pb solder.
- After applying PbF solder to double layered boards, please check

the component side for excess solder which may flow onto the opposite side. (see figure below)



Suggested Pb free solder

There are several kinds of Pb free solder available for purchase. This product uses Sn+Ag+Cu (tin, silver, copper) solder. However, Sn+Cu (tin, copper), Sn+Zn+Bi (tin, zinc, bismuth) solder can also be used.

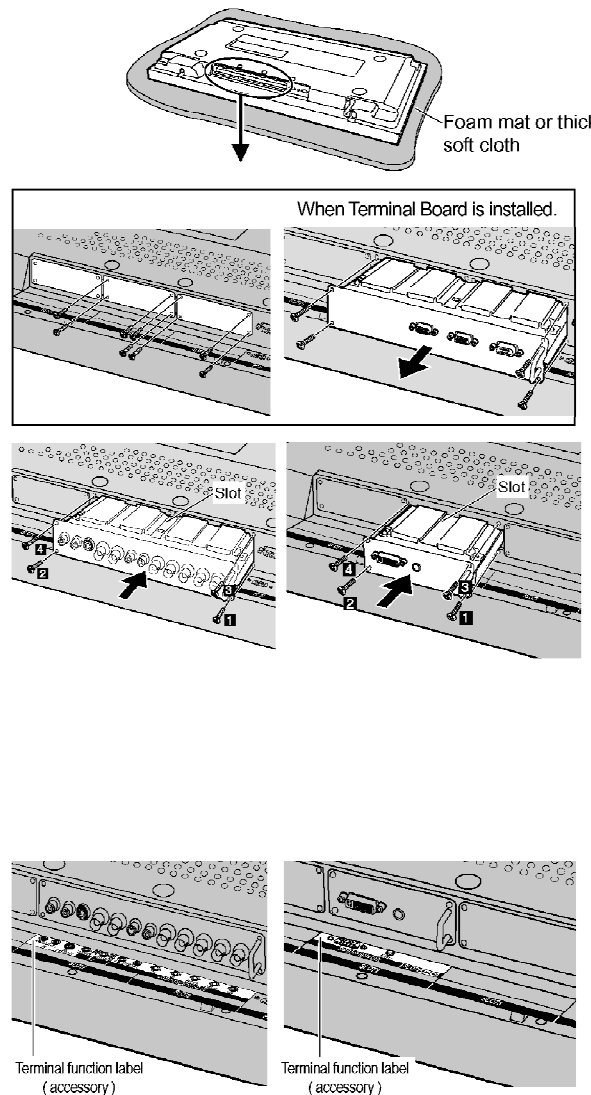
0.3mm X 100g	0.6mm X 100g	1.0mm X 100g
		

4. Replacement

The following explanation uses the 42/50-inch plasma display as an example. The terminal board shown is a typical example of one that can be replaced.

- Before proceeding with the replacement steps, be sure to turn off the entire system including the display, unplug all components from their outlets, and disconnect all the interconnect cables from the display.

The following example shows installation of a dual slot size board and a single slot size board.



1. Removing the dummy cover or mounted terminal board from display:

- Remove the slot cover securing screws (4 or 8 screws) on the back of the display. If a terminal board is already installed, grip the handle of the terminal board, and slowly pull out in the direction of the arrow.

2. Installing desired Terminal Board:

1. Insert the desired Terminal Board into the slot until it is firmly plugged into the card connector.
 - Make sure that the Board does not ride on the two lower claws.
2. Secure using the previously removed screws or those supplied with the unit. Tighten screws in the numbered order **1 - 4**.
Please note that there are slot fastening screws at 4 points on each slot (at 2 locations on both the left and right edges), so the number of fastening screws will vary depending on the number of slot insertions. Be sure to fasten all screws tightly.

3. Applying the terminal function label:

- Peel off the backing sheet from the terminal function label (accessory) and affix it over the existing label.
- Make sure that the label is affixed with the correct position.

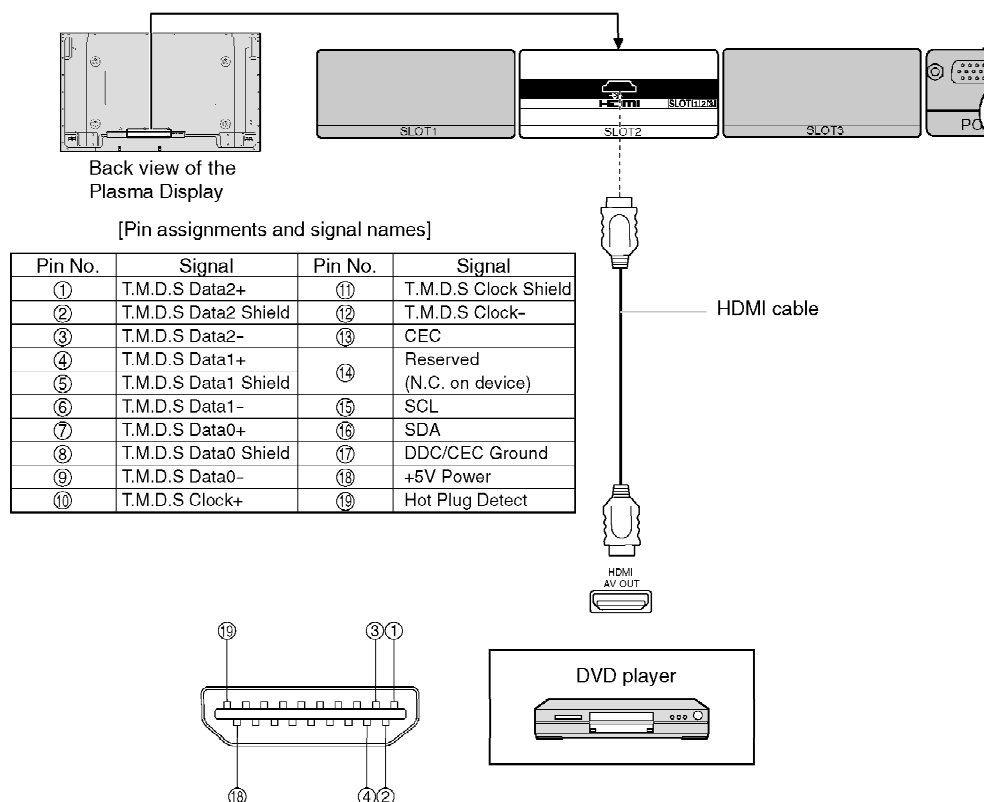
Have the customer keep the removed Terminal Board for future servicing needs.

5. Connection

Slot Nos. of the PDP unit that are compatible with terminal board attachments.

2 Slot model	Slot1 , Slot2
3 Slot model	Slot1 , Slot2 (Slot3 is not compatible)

Connection



Videosignal

[Applicable input signals]

	Signal format	fV (Hz)	fH (kHz)	Dot clock (MHz)	Number of active pixels	Total number of pixels	Number of active lines	Total number of lines
1	525/60p	59.94	31.47	27.00	720	858	480	525
2	625/50p	50.00	31.25	27.00	720	864	576	625
3	750/60p	60.00	45.00	74.25	1280	1650	720	750
4	1125/60i	60.00	33.75	74.25	1920	2200	540	562.5
5	VGA60	59.94	31.47	25.18	640	800	480	525
6	750/50p	50.00	37.50	74.25	1280	1980	720	750
7	1125/50i	50.00	28.13	74.25	1920	2640	1080	1125

Audio signal

Linear PCM : 48/44.1/32 kHz

Note:

Additional equipment and HDMI cables shown above are not supplied with this set.

6. Circuit Board Layout

6.1. HH-Board

7. Block and Schematic Diagram

7.1. Schematic Diagram Notes

Important Safety Notice

Components identified by Δ mark have special characteristics important for safety.
When replacing any of these components, use only manufacture's specified parts.

- Notes:**
- Resistor**
Unit of resistance is Ohm [Ω] (K=1,000, M=1,000,000).
 - Capacitor**
Unit of capacitance is μ F, unless otherwise noted.
 - Coil**
Unit of inductance is μ H, unless otherwise noted.
 - Test Point**
 ∇ : Test Point position
 - Earth Symbol**
 $\perp$: Chassis Earth (Cold) $\downarrow$: Line Earth (Hot)
 - Voltage Measurement**
Voltage is measured by a DC voltmeter.
Conditions of the measurement are following:
Receiving Signal Colour Bar signal
All customer's controls Maximum positions
 - When arrow mark ($\nearrow$) is found, connection is easily found from the direction of arrow.
 - Indicates the major signal flow. : Video $\Rightarrow$ Audio $\Leftarrow$
 - This schematic diagram is the latest at the time of printing and subject to change without notice.

TV-FB8HM
Schematic Diagram Notes

- Remarks:**
- The Power Circuit contains a circuit area which uses a separate power supplier to isolate the earth connection.
The circuit is defined by HOT and COLD indications in the schematic diagram. Take the following precautions.
All circuits, except the Power Circuit, are cold.
Precautions
 - Do not touch the hot part or the hot and cold parts at the same time or you may be shocked.
 - Do not short circuit the hot and cold circuits or a fuse may blow and parts may break.
 - Do not connect an instrument, such as an oscilloscope, to the hot and cold circuits simultaneously or a fuse may blow.
Connect the earth of instruments to the earth connection of the circuit being measured.
 - Make sure to disconnect the power plug before removing the chassis.

TV-FB8HM
Schematic Diagram Notes

7.2. HH-Board Block Diagram

7.3. HH-Board (1 of 2) Schematic Diagram

7.4. HH-Board (2 of 2) Schematic Diagram

8. Replacement Parts List

8.1. Replacement Parts List Notes

Important Safety Notice

*Components identified by Δ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.*

RTL (Retention Time Limited)

Note: The marking (RTL) indicates that the Retention Time is Limited for this item.
After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention.
After the end of this period, the assembly will no longer be available.

Abbreviation of part name and description

1. Resistor

Example:

ERD25TJ104 C 100KOHM, J, 1/4W
Type Allowance

2. Capacitor

Example:

ECKF1H103ZF C 0.01UF, Z, 50V
Type Allowance

Type	Allowance
C : Carbon	F : $\pm 1\%$
F : Fuse	G : $\pm 2\%$
M : Metal Oxide	J : $\pm 5\%$
Metal Film	K : $\pm 10\%$
S : Solid	M : $\pm 20\%$
W : Wire Wound	

Type	Allowance
C : Ceramic	C : $\pm 0.25\text{pF}$
E : Electrolytic	D : $\pm 0.5\text{pF}$
P : Polyester	F : $\pm 1\text{pF}$
Polypropylene	G : $\pm 3\text{pF}$
T : Tantalum	J : $\pm 5\text{pF}$
	K : $\pm 10\text{pF}$
	L : $\pm 15\text{pF}$
	M : $\pm 20\text{pF}$
	P : +100%, -0%
	Z : +80%, -20%

8.2. Electrical Replacement Parts List

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C3301	ECJ1VF1C105Z	C 1UF, Z, 16V	1	
C3302,03	ECJ1VF1H104Z	C 0.1UF, Z, 50V	2	
C3304	ECJ1VF1C105Z	C 1UF, Z, 16V	1	
C3305	ECJ1VF1H104Z	C 0.1UF, Z, 50V	1	
C3306	ECJ1VF1C105Z	C 1UF, Z, 16V	1	
C3307	EEEBB1C100R	C 10PF, J, 16V	1	
C3308,09	ECJ1VF1C105Z	C 1UF, Z, 16V	2	
C3310	ECJ1VB1H103K	C 0.001UF, K, 50V	1	
C3311	ECJ3XB0J106M	C 10UF, M,6.3V	1	
C3313	ECJ3XB0J106M	C 10UF, M,6.3V	1	
C3314	ECJ1VF1H104Z	C 0.1UF, Z, 50V	1	
C3315	ECJ1XB1H102K	C 1000UF, Z, 50V	1	
C3316	ECJ1VB1H103K	C 0.001UF, K, 50V	1	
C3317,18	ECJ1VF1H104Z	C 0.1UF, Z, 50V	2	
C3319	ECJ1XB1H102K	C 1000UF, Z, 50V	1	
C3320	ECJ1VF1H104Z	C 0.1UF, Z, 50V	1	
C3321	ECJ1VB1H103K	C 0.001UF, K, 50V	1	
C3322	ECJ1VF1C105Z	C 1UF, Z, 16V	1	
C3323	ECJ1VF1H104Z	C 0.1UF, Z, 50V	1	
C3324	ECJ1VF1C105Z	C 1UF, Z, 16V	1	
C3325	ECJ1XB1H102K	C 1000UF, Z, 50V	1	
C3326,27	ECJ1VF1H104Z	C 0.1UF, Z, 50V	2	
C3328	ECJ1VB1H103K	C 0.001UF, K, 50V	1	
C3330	ECJ1VB1H103K	C 0.001UF, K, 50V	1	
C3331	ECJ1VF1H104Z	C 0.1UF, Z, 50V	1	
C3332	ECJ3XB0J106M	C 10UF, M,6.3V	1	
C3333	ECJ1XB1H102K	C 1000UF, Z, 50V	1	
C3334	ECJ1VB1H103K	C 0.001UF, K, 50V	1	
C3335,36	ECJ1VF1H104Z	C 0.1UF, Z, 50V	2	
C3338	ECJ1VB1H103K	C 0.001UF, K, 50V	1	
C3340	ECJ1VF1H104Z	C 0.1UF, Z, 50V	1	
C3341	EEEBB0G470R	C 47PF, J, 4V	1	
C3342	ECJ1VB1H103K	C 0.001UF, K, 50V	1	
C3343,44	ECJ1VF1H104Z	C 0.1UF, Z, 50V	2	
C3345	ECJ1XB1H102K	C 1000UF, Z, 50V	1	
C3346	ECJ3XB0J106M	C 10UF, M,6.3V	1	
C3347	ECJ1VC1H120J	C 12PF, J, 50V	1	
C3348	ECJ1VF1C105Z	C 1UF, Z, 16V	1	
C3349	ECJ1VC1H120J	C 12PF, J, 50V	1	
C3350	ECJ3XB0J106M	C 10UF, M,6.3V	1	
C3351	ECJ1VF1H104Z	C 0.1UF, Z, 50V	1	
C3352	ECJ1XB1H102K	C 1000UF, Z, 50V	1	
C3353	ECJ1VF1H104Z	C 0.1UF, Z, 50V	1	
C3354	ECJ1VB1C473K	C 0.047UF, K, 16V	1	
C3355,56	ECJ1XB1H102K	C 1000UF, Z, 50V	2	
C3357	ECJ1VF1H104Z	C 0.1UF, Z, 50V	1	
C3358	EEEBB0G470R	C 47PF, J, 4V	1	
C3359	ECJ1VB1H103K	C 0.001UF, K, 50V	1	
C3360	ECJ1VF1C105Z	C 1UF, Z, 16V	1	
C3361	ECJ1VB1H103K	C 0.001UF, K, 50V	1	
C3362	EEEBB0G470R	C 47PF, J, 4V	1	
C3363	ECJ1VF1H104Z	C 0.1UF, Z, 50V	1	
C3365	ECJ1VF1H104Z	C 0.1UF, Z, 50V	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C3366	EEEB1C100R	C 10PF, J, 16V	1	
C3367	EEEB1C470P	C 47PF, J, 16V	1	
C3368,69	ECJ3XF1C475Z	C 4.7UF, Z, 16V	2	
C3370	ECJ1VF1H104Z	C 0.1UF, Z, 50V	1	
C3371,72	EEEB1C100R	C 10PF, J, 16V	2	
C3373	ECJ1VF1C105Z	C 1UF, Z, 16V	1	
C3374	ECJ1VF1H104Z	C 0.1UF, Z, 50V	1	
C3375,76	ECJ1VB1H272K	C 2700PF, K, 50V	2	
C3377	EEEB1C470P	C 47PF, J, 16V	1	
C3378	ECJ1VB1H103K	C 0.001UF, K, 50V	1	
C3379	ECJ1VF1C105Z	C 1UF, Z, 16V	1	
C3380	ECJ1XC1H181J	C 180PF, J, 50V	1	
C3381	ECJ1VF1H104Z	C 0.1UF, Z, 50V	1	
C3382	ECJ1XC1H181J	C 180PF, J, 50V	1	
C3383,84	ECJ1XC1H330J	C 33PF, J, 50V	2	
C3385	ECJ1VB1H103K	C 0.001UF, K, 50V	1	
C3386	EEEB1C470P	C 47PF, J, 16V	1	
C3387-89	ECJ1XB1H102K	C 1000UF, Z, 50V	3	
C3390-92	ECJ1VF1H104Z	C 0.1UF, Z, 50V	3	
C3393,94	ECJ1XB1H102K	C 1000UF, Z, 50V	2	
C3395,96	ECJ1VF1H104Z	C 0.1UF, Z, 50V	2	
C3397	ECJ1XC1H180J	C 18PF, J, 50V	1	
C3398	EEEB0G470R	C 47PF, J, 4V	1	
C3399	ECJ1VF1H104Z	C 0.1UF, Z, 50V	1	
C3400	ECJ1VF1C105Z	C 1UF, Z, 16V	1	
C3401-05	ECJ1VF1H104Z	C 0.1UF, Z, 50V	5	
C3406,07	ECJ3XF1C475Z	C 4.7UF, Z, 16V	2	
C3408-10	ECJ1XB0J105K	C 1UF, K, 16V	3	
C3411-13	EEEB1E220P	C 22PF	3	
C3414-16	ECJ1XC1H220J	C 22PF, J, 50V	3	
C3417-19	EEEB0J470R	C 47PF, J, 6.3V	3	
C3420,21	ECJ1XB1C104K	C 0.1UF, Z, 16V	2	
C3422	EEEB1C470P	C 47PF, J, 16V	1	
C3423-25	EEVHB1C471	E 470UF, 16V	3	
C3426-28	ECJ1VF1C105Z	C 1UF, Z, 16V	3	
C3429	ECJ1VF1H104Z	C 0.1UF, Z, 50V	1	
C3430	EEEB1C470P	C 47PF, J, 16V	1	
C3431-33	ECJ1VF1H104Z	C 0.1UF, Z, 50V	3	
D3301	MA3056M	ZENER DIODE	1	
D3302-04	EZJ20V80008B	VARISTOR	3	
D3306	MA152	DIODE	1	
D3307,08	EZJ20V80008B	VARISTOR	2	
D3309	MA152	DIODE	1	
D3310,11	EZJ20V80008B	VARISTOR	2	
D3312	MA3056M	ZENER DIODE	1	
D3313-16	EZJ20V80008B	VARISTOR	4	
D3317	MA3036H	ZENER DIODE	1	
FL3301-07	J0HABB000004	LC FILTER	7	
HQ1	K1KA80B00037	80P CONNECTOR	1	
HQ2	K1KA07AA0150	7P CONNECTOR	1	
HQ3	K1KA10AA0153	10P CONNECTOR	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
IC3301	C0FBBK000038	IC	1	
IC3302	TVRN588	IC	1	
IC3303	C0JBAZ002269	IC	1	
IC3304	PST9128NR	IC (LOGIC)	1	
IC3305	C1AB00001981	IC	1	
IC3306	TVRN587	IC	1	
IC3308	CXA1315M	LINEAR IC	1	
IC3309	C0ABBB000289	IC	1	
IC3310	C0ZBZ0000967	IC	1	
IC3311	TVRN413-1	IC	1	
IC3312	JLC1562BF	MOS IC (MICON LSI) *	1	
IC3313	C0ABBB000289	IC	1	
IC3314	TVRN567	IC	1	
IC3315,16	C0JBAZ002269	IC	2	
IC3317	C0JBAB000781	IC	1	
IC3318	C0ABZA000045	IC	1	
IC3319	C0JBAB000781	IC	1	
JK3301	K1FA119E0001	CONNECTOR	1	
L3301	J0JBC0000080	CHIP INDUCTOR	1	
L3302	ELJPA2R2MF	CHIP INDUCTOR	1	
L3303,04	J0JHC0000031	CHIP INDUCTOR	2	
L3305	J0JBC0000080	CHIP INDUCTOR	1	
L3306,07	J0JHC0000031	CHIP INDUCTOR	2	
L3308,09	J0JBC0000080	CHIP INDUCTOR	2	
L3310	J0JHC0000031	CHIP INDUCTOR	1	
L3311-14	J0JBC0000080	CHIP INDUCTOR	4	
L3315,16	J0JHC0000031	CHIP INDUCTOR	2	
L3317	ELJPA100KB	CHIP INDUCTOR	1	
Q3301,02	2SD601A	TRANSISTOR	2	
Q3303	2SB0709A	TRANSISTOR	1	
Q3304,05	2SD601A	TRANSISTOR	2	
Q3306	2SB0709A	TRANSISTOR	1	
Q3307-12	2SD601A	TRANSISTOR	6	
Q3313-18	2SA207700L	TRANSISTOR	6	
R3301-08	ERJ3GEYJ3R9	M 3.9HM,J,1/16W	8	
R3309,10	ERJ3GEYJ330	M 33 OHM,J,1/16W	2	
R3311,12	ERJ3GEYJ103	M 10KOHM,J,1/16W	2	
R3313	TAJAAH0470JV	M 47 OHM,J,1/16W	1	
R3314	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R3315	ERJ3GEYJ102	M 1KOHM,J,1/16W	1	
R3316	ERJ3GEYJ272	M 2.7KOHM,J,1/16W	1	
R3318,19	ERJ3GEY0R00	M 0 OHM, 1/16W	2	
R3321	ERJ3GEYJ153	M 15KOHM,J,1/16W	1	
R3322	ERJ3GEYJ473	M 47KOHM,J,1/16W	1	
R3323	ERJ3GEYJ333	M 33KOHM,J,1/16W	1	
R3324-26	ERJ3GEYJ103	M 10KOHM,J,1/16W	3	
R3327	ERJ3GEYJ472	M 4.7KOHM,J,1/16W	1	
R3328	TAJAAH0680JV	M 68 OHM,J,1/16W	1	
R3329	ERJ3GEYJ472	M 4.7KOHM,J,1/16W	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R3330,31	ERJ3GEYJ330	M 33 OHM,J,1/16W	2	
R3332	ERJ3GEYJ102	M 1KOHM,J,1/16W	1	
R3333	ERJ3GEYJ221	M 220 OHM,J,1/16W	1	
R3334	ERJ3GEY0R00	M 0 OHM, 1/16W	1	
R3335	ERJ3EKF3900	M 390 OHM, 1/16W	1	
R3336	ERJ3GEYJ472	M 4.7KOHM,J,1/16W	1	
R3337	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R3339,40	ERJ3GEYJ220	M 22 OHM,J,1/16W	2	
R3342	EXB38V220J	RESISTOR ARRAY	1	
R3343	ERJ6ENF1500	M 150 OHM, 1/10W	1	
R3344	ERJ3GEYJ472	M 4.7KOHM,J,1/16W	1	
R3345	ERJ3GEYJ151	M 150 OHM,J,1/16W	1	
R3346	ERJ3GEYJ472	M 4.7KOHM,J,1/16W	1	
R3347-49	ERJ3GEY0R00	M 0 OHM, 1/16W	3	
R3350	ERJ3GEYJ332	M 3.3KOHM,J,1/16W	1	
R3351	EXB38V220J	RESISTOR ARRAY	1	
R3352	ERJ3GEY0R00	M 0 OHM, 1/16W	1	
R3353-55	ERJ3GEYJ472	M 4.7KOHM,J,1/16W	3	
R3356	ERJ3GEYJ102	M 1KOHM,J,1/16W	1	
R3357	EXB38V220J	RESISTOR ARRAY	1	
R3358	ERJ3GEYJ472	M 4.7KOHM,J,1/16W	1	
R3359	ERJ3GEYJ392	M 3.9KOHM,J,1/16W	1	
R3360	ERJ3GEYJ682	M 6.8KOHM,J,1/16W	1	
R3361	ERJ3GEYJ122	M 1.2KOHM,J,1/16W	1	
R3362	EXB38V220J	RESISTOR ARRAY	1	
R3363,64	ERJ3GEYJ330	M 33 OHM,J,1/16W	2	
R3365	ERJ3GEYJ392	M 3.9KOHM,J,1/16W	1	
R3366	ERJ3GEY0R00	M 0 OHM, 1/16W	1	
R3367	ERJ3GEYJ330	M 33 OHM,J,1/16W	1	
R3369	ERJ3GEYJ330	M 33 OHM,J,1/16W	1	
R3370,71	EXB38V220J	RESISTOR ARRAY	2	
R3372	EXB38V330J	RESISTOR ARRAY	1	
R3374	ERJ3GEYJ223	M 22KOHM,J,1/16W	1	
R3375	ERJ3GEYJ562	M 5.6KOHM,J,1/16W	1	
R3376-81	ERJ3GEY0R00	M 0 OHM, 1/16W	6	
R3386,87	ERJ3GEY0R00	M 0 OHM, 1/16W	2	
R3388	ERJ3GEYJ472	M 4.7KOHM,J,1/16W	1	
R3389	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R3390	ERJ3GEYJ330	M 33 OHM,J,1/16W	1	
R3394,95	ERJ3GEYJ473	M 47KOHM,J,1/16W	2	
R3396-99	ERJ3GEYJ103	M 10KOHM,J,1/16W	4	
R3400,01	ERJ6GEYJ102	M 1KOHM,J,1/10W	2	
R3402	ERJ3GEYJ105	M 1MOHM,J,1/16W	1	
R3403,04	ERJ3GEYJ331	M 330 OHM,J,1/16W	2	
R3405	ERJ3GEYJ330	M 33 OHM,J,1/16W	1	
R3407	ERJ3GEYJ223	M 22KOHM,J,1/16W	1	
R3408	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R3409,10	TAJAAH0680JV	M 68 OHM,J,1/16W	2	
R3412	TAJAAH0680JV	M 68 OHM,J,1/16W	1	
R3413	ERJ3GEYJ393	M 39KOHM,J,1/16W	1	
R3414,15	ERJ3GEYJ103	M 10KOHM,J,1/16W	2	
R3416,17	ERJ3GEYJ473	M 47KOHM,J,1/16W	2	
R3418,19	ERJ6GEYJ101	M 100 OHM,J,1/10W	2	
R3422,23	ERJ3GEYJ330	M 33 OHM,J,1/16W	2	

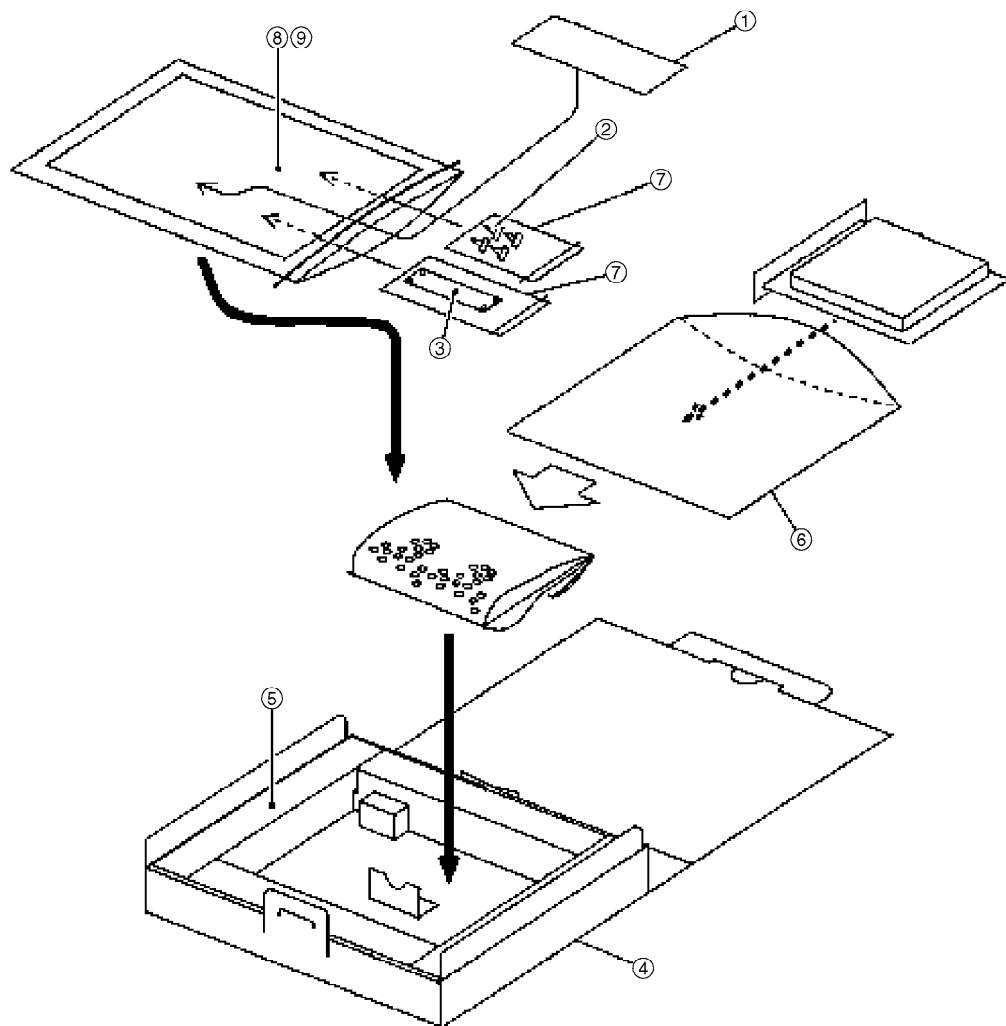
Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R3424	ERJ3EKF3302	M 33KOHM, 1/16W	1	
R3427	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R3428	ERJ3EKF3302	M 33KOHM, 1/16W	1	
R3429	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R3430,31	ERJ3GEYJ330	M 33 OHM,J,1/16W	2	
R3432	ERJ3GEYJ472	M 4.7KOHM,J,1/16W	1	
R3433	ERJ3GEYJ223	M 22KOHM,J,1/16W	1	
R3434	ERJ3GEYJ472	M 4.7KOHM,J,1/16W	1	
R3435	ERJ3GEYJ223	M 22KOHM,J,1/16W	1	
R3436,37	ERJ3EKF2202	M 22KOHM, 1/16W	2	
R3438,39	ERJ3GEYJ393	M 39KOHM,J,1/16W	2	
R3440,41	ERJ3GEYJ330	M 33 OHM,J,1/16W	2	
R3442	ERJ3GEYJ472	M 4.7KOHM,J,1/16W	1	
R3444,45	ERJ3GEY0R00	M 0 OHM, 1/16W	2	
R3446	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R3447,48	ERJ3GEYJ220	M 22 OHM,J,1/16W	2	
R3449	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R3450	TAJAAH0101JV	M 100 OHM,J,1/16W	1	
R3451	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R3452,53	ERJ3GEYJ220	M 22 OHM,J,1/16W	2	
R3454	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R3455-58	ERJ3GEYJ473	M 47KOHM,J,1/16W	4	
R3459,60	ERJ6GEYJ102	M 1KOHM,J,1/10W	2	
R3461,62	ERJ6GEYJ101	M 100 OHM,J,1/10W	2	
R3463-66	ERJ3EKF2202	M 22KOHM, 1/16W	4	
R3467	ERJ3GEYJ473	M 47KOHM,J,1/16W	1	
R3468-70	ERJ6ENF68R0	M 68 OHM, 1/10W	3	
R3471-73	ERJ3GEYJ221	M 220 OHM,J,1/16W	3	
R3474	ERJ3GEYJ561	M 560 OHM,J,1/16W	1	
R3475	ERJ3GEYJ271	M 270 OHM,J,1/16W	1	
R3476	ERJ3GEYJ561	M 560 OHM,J,1/16W	1	
R3477	ERJ3GEYJ271	M 270 OHM,J,1/16W	1	
R3478	ERJ3GEYJ561	M 560 OHM,J,1/16W	1	
R3479	ERJ3GEYJ271	M 270 OHM,J,1/16W	1	
R3483-85	ERJ3GEYJ221	M 220 OHM,J,1/16W	3	
R3486-88	ERJ3GEYJ561	M 560 OHM,J,1/16W	3	
R3489-91	ERJ6ENF75R0	M 75 OHM, 1/10W	3	
R3492-97	ERJ6GEYJ333	M 33KOHM,J,1/10W	6	
R3498	ERJ6GEYJ223	M 22KOHM,J,1/10W	1	
R3499,00	ERJ6ENF3300	M 330 OHM, 1/10W	2	
R3501	ERJ6GEYJ223	M 22KOHM,J,1/10W	1	
R3502,03	ERJ6ENF3300	M 330 OHM, 1/10W	2	
R3504-06	ERJ6GEYJ102	M 1KOHM,J,1/10W	3	
R3507,08	ERJ6ENF3300	M 330 OHM, 1/10W	2	
R3509	ERJ6GEYJ223	M 22KOHM,J,1/10W	1	
R3510-12	ERJ6ENF75R0	M 75 OHM, 1/10W	3	
R3513,14	ERJ3GEYJ103	M 10KOHM,J,1/16W	2	
R3515-18	ERJ3GEYJ220	M 22 OHM,J,1/16W	4	
R3519,20	ERJ3GEYJ103	M 10KOHM,J,1/16W	2	
R3521-24	ERJ3GEYJ220	M 22 OHM,J,1/16W	4	
R3526-28	ERJ3GEYJ104	M 100KOHM,J,1/16W	3	
R3529-34	EXB38V104J	RESISTOR ARRAY	6	
R3535	ERJ3GEYJ220	M 22 OHM,J,1/16W	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
RTL	TXNHA10ZYS	CIRCUIT BOARD HDMI	1	⚠
SW3301	TSE995	SWITCH	1	
X3301	H0J400400017	CRYSTAL	1	

8.3. Mechanical Replacement Parts List

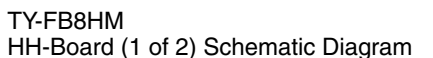
Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
<u>1</u>	TBMU462-1	AV TERMINAL SHEET	1	
	THEL0239	SCREW	3	
<u>2</u>	THEL0239	SCREW	4	
	THEL027N	SCREW	4	
<u>3</u>	TKKL5266	COVER	1	
<u>4</u>	TPCB13144	CARTON BOX	1	⚠
<u>5</u>	TPDF1103	CUSHION	1	
<u>6</u>	TPEH135	PROTECT COVER	1	
<u>7</u>	TQE6691	POLY BAG	2	
<u>8</u>	TQZH461	INSTRUCTION SEET	1	
<u>9</u>	TQZH662	INSTRUCTION BOOK	1	⚠
	XZBT6506	POLY BAG	1	

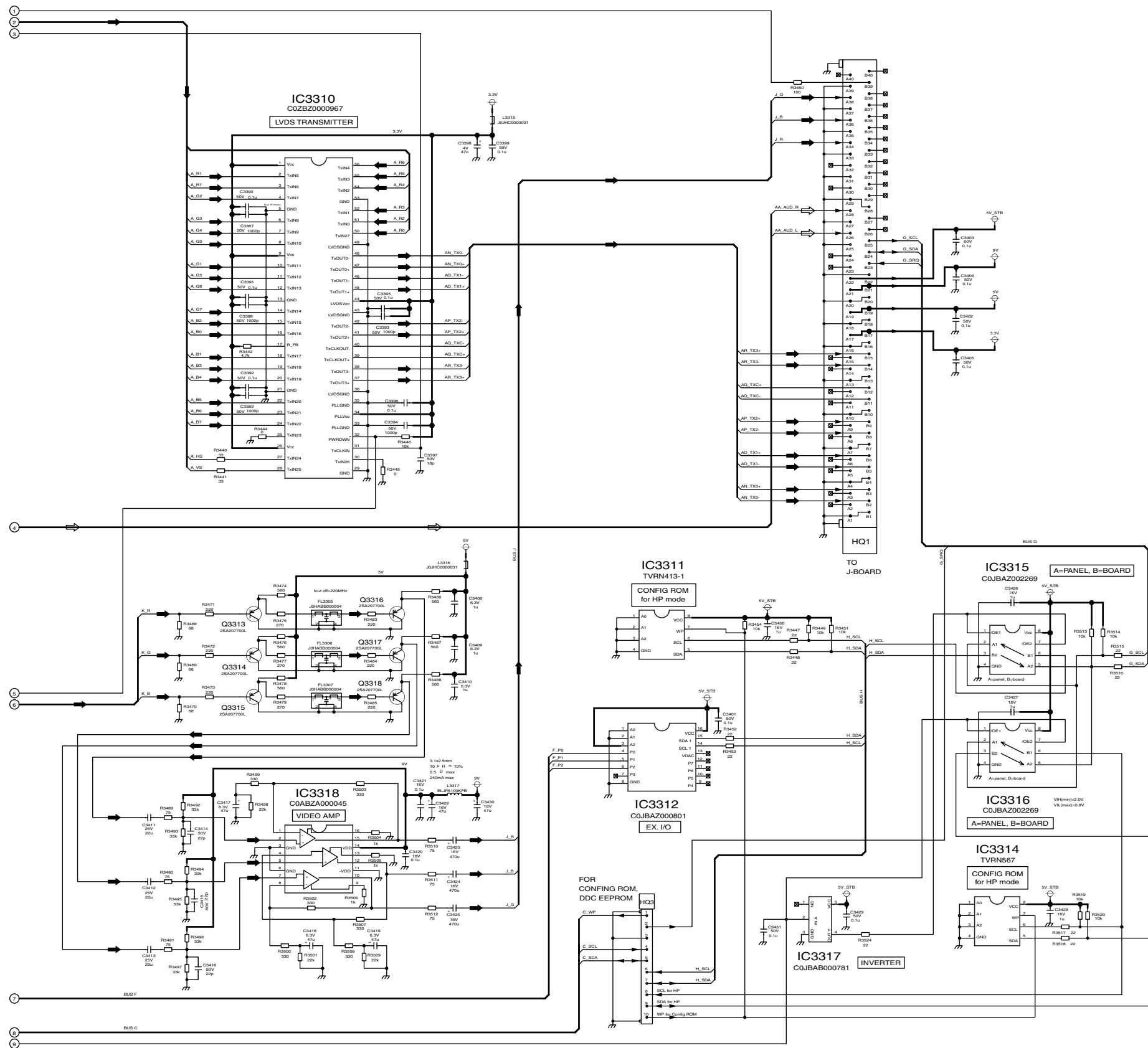
8.4. Parts Location



9. Schematic Diagram for printing with A4 size

F





⚠ HH-BOARD TXNHA10ZYS (2/2)



7 Block and Schematic Diagram

7.1. Schematic Diagram Notes

Important Safety Notice

Components identified by $\triangle$ mark have special characteristics important for safety.
When replacing any of these components, use only manufacture's specified parts.

Notes:

1. **Resistor**
Unit of resistance is OHM [Ω] (K=1,000, M=1,000,000).
2. **Capacitor**
Unit of capacitance is μ F, unless otherwise noted.
3. Coil
Unit of inductance is μ H, unless otherwise noted.
4. Test Point
 : Test Point position
5. Earth Symbol
 : Chassis Earth (Cold)  : Line Earth (Hot)
6. Voltage Measurement
Voltage is measured by a DC voltmeter.
Conditions of the measurement are following:
Receiving Signal Colour Bar signal
All customer's controls Maximum positions
7. When arrow mark () is found, connection is easily found from the direction of arrow.
8. Indicates the major signal flow. : Video  Audio 
9. This schematic diagram is the latest at the time of printing and subject to change without notice.

Remarks:

1. The Power Circuit contains a circuit area which uses a separate power supplier to isolate the earth connection.

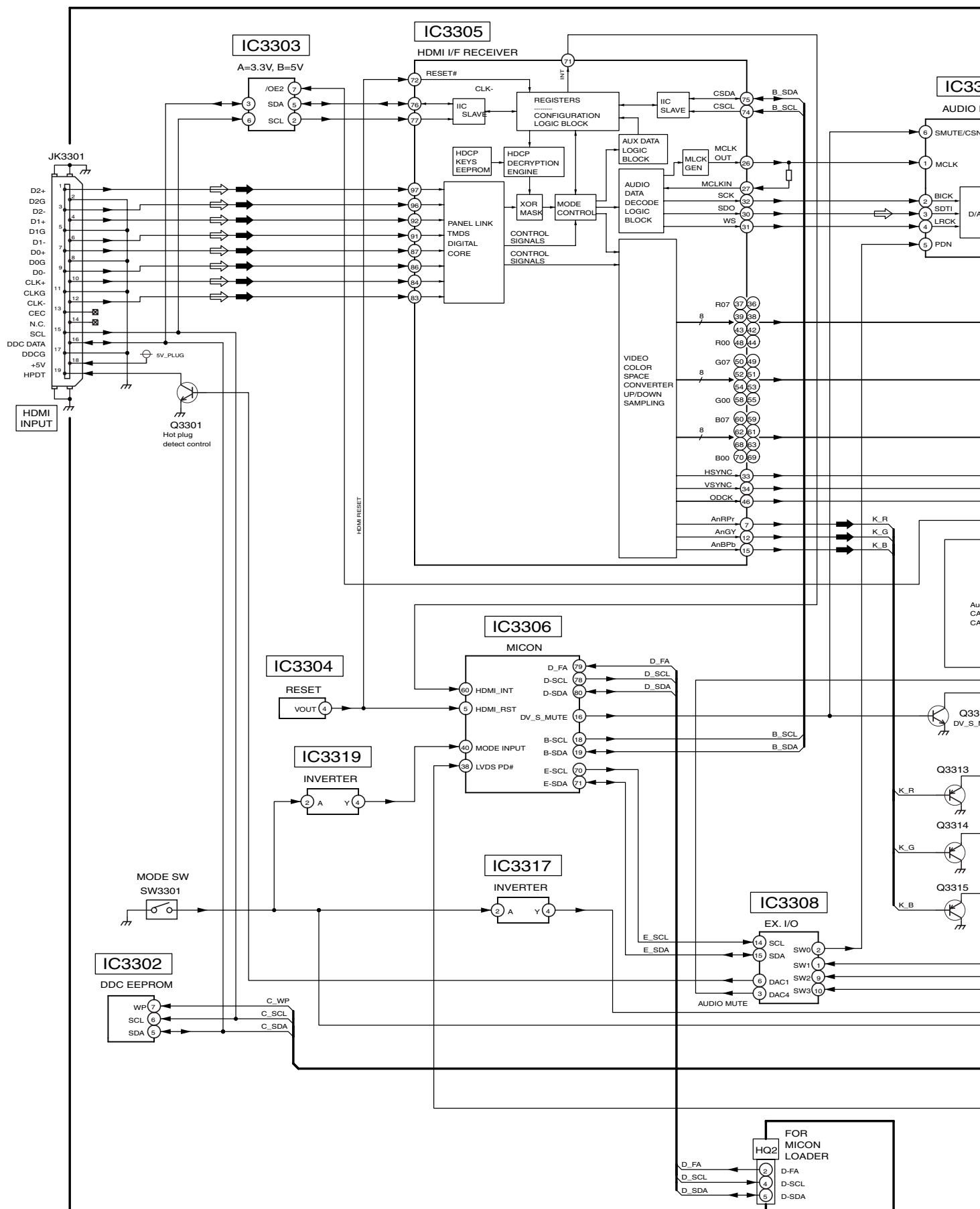
The circuit is defined by HOT and COLD indications in the schematic diagram. Take the following precautions.

All circuits, except the Power Circuit, are cold.

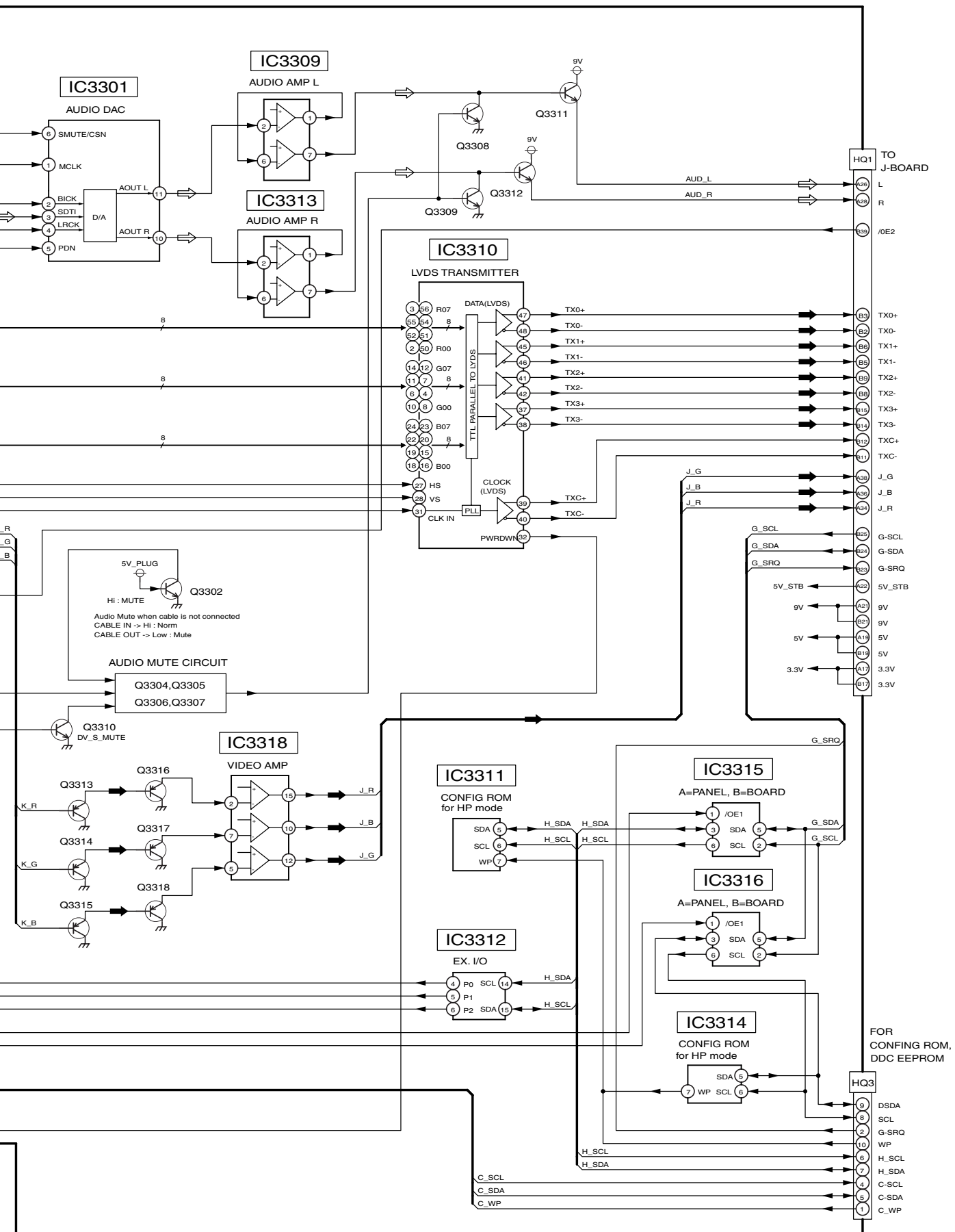
Precautions

- a. Do not touch the hot part or the hot and cold parts at the same time or you may be shocked.
- b. Do not short- circuit the hot and cold circuits or a fuse may blow and parts may break.
- c. Do not connect an instrument, such as an oscilloscope, to the hot and cold circuits simultaneously or a fuse may blow.
Connect the earth of instruments to the earth connection of the circuit being measured.
- d. Make sure to disconnect the power plug before removing the chassis.

7.2. HH-Board Block Diagram



TY-FB8HM HH-Board Block Diagram



TY-FB8HM HH-Board Block Diagram

7.3. HH-Board (1 of 2) Schematic Diagram



HH-BOARD TXNHA10ZYS (1/2)

A

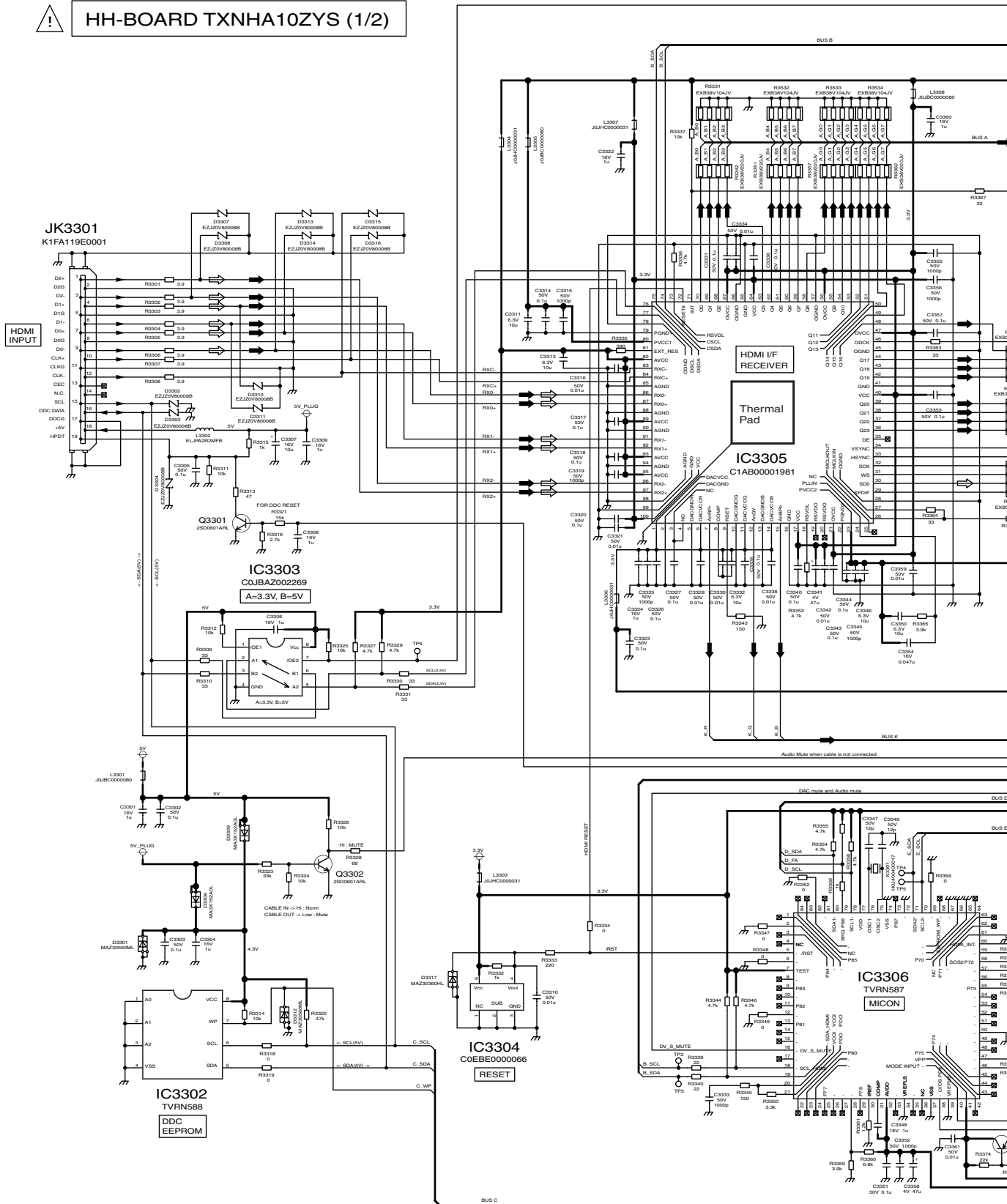
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TY-FB8HM
HH-Board (1 of 2) Schematic Diagram

1

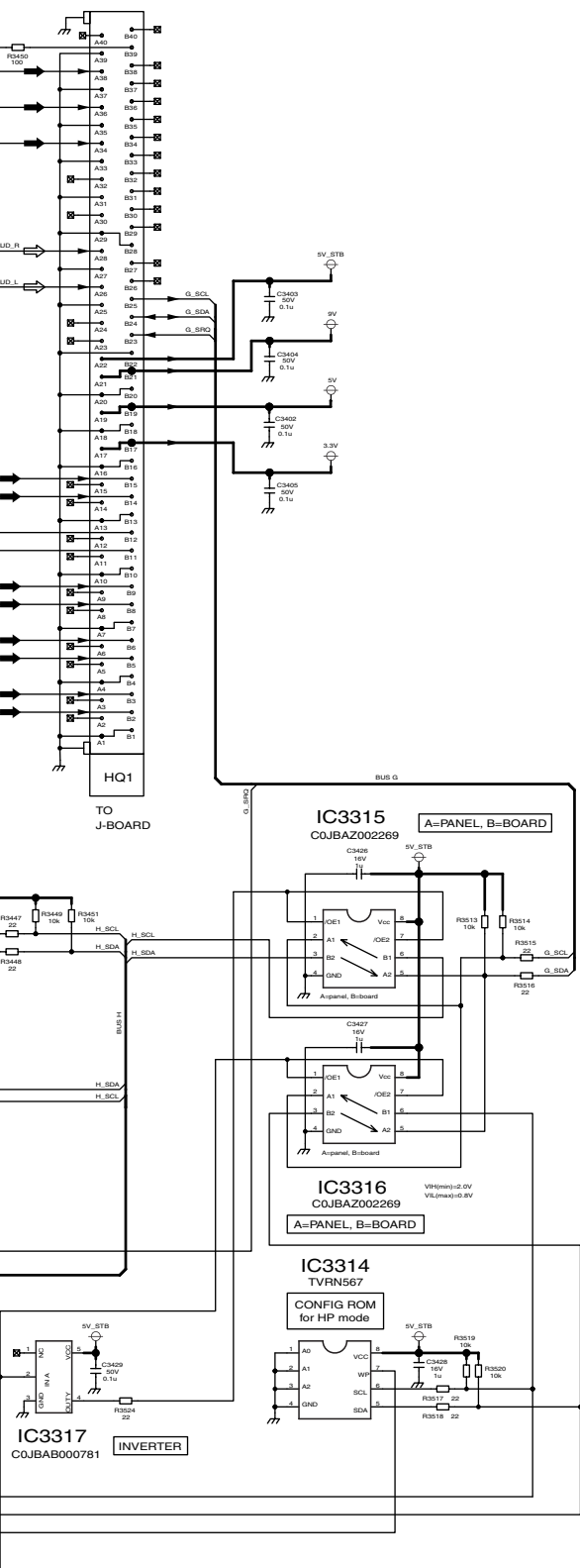
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HH-BOARD TXNHA10ZYS (2/2)

TY-FB8HM
HH-Board (2 of 2) Schematic Diagram



HH-BOARD (COMPONENT SIDE)			
IC		TRANSISTOR	
IC3301	C-6	Q3301	E-3
IC3302	A-5	Q3302	E-3
IC3303	B-4	Q3304	C-5
IC3305	C-4	Q3305	C-4
IC3306	E-4	Q3306	D-4
IC3309	D-5	Q3307	C-4
IC3313	D-6	Q3308	C-5
IC3315	F-2	Q3309	D-5
IC3316	F-1	Q3310	D-4
		TP	
		TP1	B-5
		TP6	B-4

HH-BOARD (FOIL SIDE)			
IC		TRANSISTOR	
IC3304	D-4	Q3303	C-4
IC3307	B-4	Q3311	E-5
IC3308	D-1	Q3312	D-4
IC3310	C-3	Q3313	F-2
IC3311	B-2	Q3314	F-2
IC3312	C-1	Q3315	F-2
IC3314	D-2	Q3316	F-1
IC3317	B-2	Q3317	E-1
IC3318	D-3	Q3318	E-1
IC3319	B-4	TP	
		TP2	E-4
		TP3	F-4
		TP4	D-2
		TP5	D-3